

Managing Phytophthora



Woookarung
Regional Park

December 2022

Phytophthora

Phytophthora (commonly known as Cinnamon Fungus), is a plant disease that attacks and destroys root systems causing plants to die through lack of water and nutrients. It is listed in the top 100 of the world's most invasive species and is Victoria's most significant plant pathogen affecting native ecosystems and the horticultural industry. The disease impacts many plants including Banksias, Eucalypts, Grass-trees, Peas and Heaths. Phytophthora impacts in different ways: ranging from certain death (also called die-back) to poor root and canopy development, reduced nectar production and seed set. Phytophthora has the ability to change ecosystems permanently, removing shelter for fauna species and changing fire behaviour due to different phytophthora resistant plant species colonising the now bare patches. There is no known cure for this disease.

Phytophthora in Woookarung

When exactly Phytophthora was first introduced in Woookarung, may never be known; that said, the first record was from a forestry company in the 1970s. In 2020, laboratory testing confirmed that the introduced species *Phytophthora cinnamomi* is present in Woookarung Regional Park. The disease spreads via contaminated gravel, soil on shoes, tyres, machinery and tools but also via water run-off on eroded trails or sloping sites.

Woookarung is on Wadawurrung Country. The Wadawurrung Traditional Owners Aboriginal Corporation has identified Phytophthora as a key threat to living culture in the Healthy Country Plan 2020-2023.

Impacts on the environment

Woookarung has a species rich, Heathy Dry-forest vegetation community that is at high risk to Phytophthora. Approximately 200 plant species call the park home, with about a third of these susceptible to the disease. Austral Grass-trees (*Xanthorrhoea australis*) show very obvious symptoms of the disease and therefore make a good indicator species. Their slow death and 'trunk rings' remain visible in the ground, even years after the above ground plant has fully disappeared. This makes disease spread relatively easy to see.

Ecological Survey – 2017 to 2022

Parks Victoria commissioned Ecology Heritage Partners Pty Ltd to undertake an ecological survey of Phytophthora impacts within Woookarung Regional Park during April 2022. The purpose of this assessment was to map changes in Grass-tree distribution, cover and health since 2017, that may be caused by the impacts of Phytophthora.

The positives

In the 2022 report, 33 new patches of Small Grass-trees (*Xanthorrhoea minor*) were identified, bringing the total to 36 locations. Most patches are relatively small but it shows that the Small Grass-tree population is larger and more widespread than previously known. Although the Small Grass-tree is susceptible to Phytophthora, die-back was not observed. Besides the already known Austral Grass-tree (*Xanthorrhoea australis*) and Small Grass-tree, the report identifies the potential for a third species. Further research will be required, but this species could be Trunkless Grass-tree (*Xanthorrhoea caespitosa*) or a hybrid. The report also highlighted that the control strategies currently undertaken in Woookarung by both Parks Victoria and park visitors are considered 'best practice'. Providing washdown stations for bikes and shoes, educational signage, laboratory soil sampling, phytophthora-safe event management, contractor work hygiene protocols, trail engineering solutions, avoidance and rehabilitation of potential Phytophthora hotspots and healthy uninfected areas are recommended to continue.

Not so positives

An additional 8.4 hectares of dieback was recorded in Woookarung, bringing the total number of known hectares infected from 2.8 hectares in 2017 to 11.2 hectares in 2022. The total area of park without *Xanthorrhoea* species present has also increased from 302 hectares in 2017 to 348 hectares 2022.

Die-back is now also recorded in the most dense stands of grass-trees (50-75% cover), previously disease free. Many of the die-back areas are along tracks and roads, or within the watershed below those tracks and roads. It is important to note that although the disease is actively spreading, the increase of die-back patches and areas where *Xanthorrhoea* is now fully absent can also partly be contributed to a more accurate survey method compared to 2017.

Recommendations

The key recommendation is to reduce the spread of Phytophthora by restricting visitor access to high quality vegetation and infected areas.

Other recommendations include reviewing how ecological burning can increase *Xanthorrhoea* seed set and establishing trial sites using the chemical *Phospite* to temporarily boost *Xanthorrhoea* immune systems.

Further information

Please see map overleaf with Die-back areas in Woookarung Regional Park, as of 2022.

For more information on Woookarung Regional Park, or how to help reduce the spread visit parks.vic.gov.au or call 13 1963.

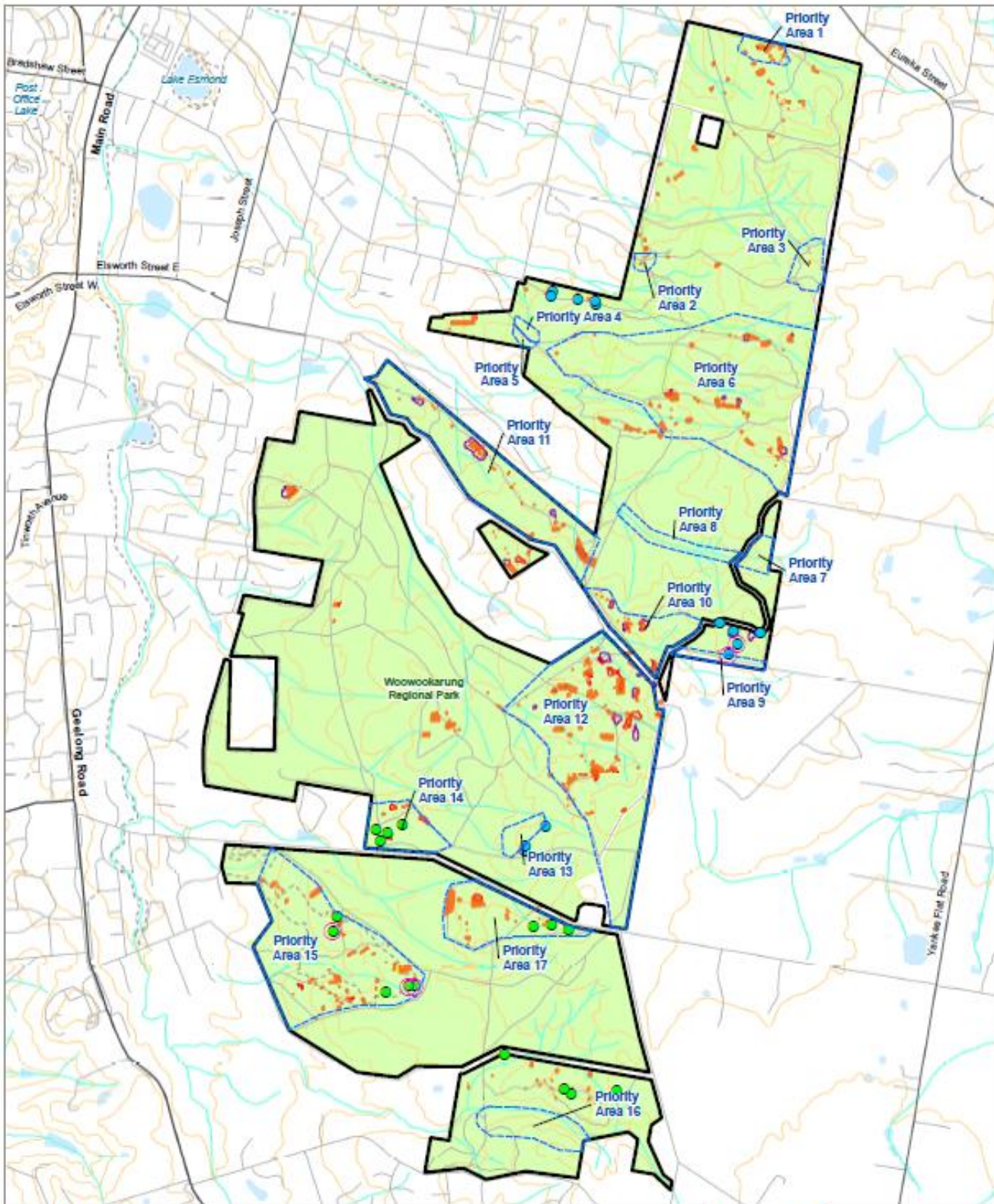


Figure 4 Overview
Mapped Dieback areas
Ecological survey for
dieback for
Woowookarung Regional
Park

Legend

- Study Area
- Priority Area
- Dead patch and dieback
- BIOSIS 2017 dieback and dead patch areas**
- Dead patch
- Dieback
- Dieback - old

Soil survey location

- Sample date: 9/11/2021
- Sample date: 12/11/2021
- Positive test result

Other features

- Contour (10m)
- Minor Watercourse
- Permanent Waterbody
- Parks and Reserves



ViMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

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